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SALES hereby certify that annexed is a true copy of the Provisional specification
in connection with Application No. PQ2483 for a patent by GLOBAL SPILL
CONTROL PTY. LIMITED filed on 27 August 1999.

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Thirteenth day of September 2000

LEANNE MYNOTT
TEAM LEADER EXAMINATION
SUPPORT AND SALES



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PROVISIONAL SPECIFICATION

APPLICANT: GLOBAL SPILL CONTROL PTY. LIMITED
NUMBER:
FILING DATE:

Invention Title: PLANT AND PRODUCT TREATMENT

The invention is described in the following statement:-

PLANT AND PRODUCT TREATMENT

This invention relates to a plant and product treatment and in particular to a treatment which acts as an anti-mildew and anti-fungal spray which also has anti-bacterial properties.

5 It is known to use products produced from citrus, specifically oranges, such as a product called Citrex which is a product which is manufactured from pith and/or pulp of oranges and which can be considered to be a mixture of bioflavanoids or similar products made from grapefruit or, further similar products which can be produced artificially as anti-bacterial agents. For convenience, we shall refer to these types of
10 products as citrus agents.

Caprylic acid (which is also known as octanoic acid) is known as an anti-fungal agent.

Both the citrus agents and caprylic acid are quite expensive.

The object of the invention is to provide a new plant and product treatment which has
15 anti-bacterial and anti-fungal actions which have not been achieved by either citrus agents or caprylic acid, and which can also preferably have anti-mildew and anti-viral properties.

We have found that the provision of a mixture of citrus agent and caprylic acid together with carriers, possibly glycerine, alcohol and water, provides a synergistic
20 mixture which gives a better result than the use of either of the compounds alone when used to treat plant materials and plant products.

The invention thus includes a synergistic mixture for the treatment of plant and plant products which includes both a citrus agent and caprylic acid.

We have found by using a mixture of the invention we can reduce considerably the quantity of citrus agent needed to give a required end result and use only a small percentage of caprylic acid, which is also expensive, to provide a treatment which is very much cheaper than previously available using these compounds to provide the results required.

In order that the invention may be more readily understood we shall describe one particular embodiment of the invention.

In this embodiment we use a mixture formed as follows:-

	citrus agent	1-15%
10	glycerine	50-70%
	caprylic acid	1-10%
	alcohol	15-20%
	water	1-10%

In a specific mixture which we have used and from which we have had very good results, we use:

	Citrex(a specific citrus agent)	13%
	glycerine	60%
	caprylic acid	3%
	alcohol	18%
20	water	6%

The mixture for use is diluted and we have found that when it is required for use against Downey and Powdery mildew, one litre of the mixture added to 500 litres of water provides good coverage for one hectare. That is there is 2 ml of mixture per litre of water.

For golf course fungi we have found a dose rate of one litre of the mixture in 100 litres of water, 10ml/litre, is satisfactory.

For fungi found during mushroom production we use a mixture of 3-4 ml per litre of water.

- 5 For application, it is necessary one the mixture has been diluted, to maintain agitation as caprylic acid is effectively insoluble in water. It does not need great agitation and we suggest that where the product is being sprayed from a tank then continual agitation be effected, and most such tanks have agitators. If it is being sprayed from a
- 10 ~~knap-sack pump or the like, then normally the body movement of the wearer will~~ ensure the dispersion of the caprylic acid. Where it is being used with a hand sprayer, it is desirable to shake the sprayer before each application of the product.

We have effected field trials in mushrooms, vineyards, and grasses.

- We have found that we have had positive results against three specific fungi,
- 15 *Verticillium fungicola* var. *fungicola* (dry bulb), *Mycogone perniciosa* (wet bulb) and *Cladobotryum dendroides*, formally "*Dactylium dendroides*" (Cobweb), which have developed a mutagenic resistance to conventional fungicides.

The synergistic mixture of the invention satisfactorily killed these fungi.

- In the vineyards we used the product again the fungus Botrytus (*Botrytis cinerea*) and the mildews, Downey Mildew (*Plasmopara viticola*) and Powdery mildew
- 20 (*Uncinulanecator*) and the product has been successful against these.

The product has been used in grasses and has successfully been used against the following fungi:

Fusarium acuminatari

Brown Spot (*Rhizoctonia*)

Dollar Spot (*Sclerotinia homoeocarpa*)

Fairy Ring (*Agraricales & Gastromycetale*).

Tests against bacteria have also provided satisfactory results and amongst bacterias
5 tested are:

Pseudomonas

Erwinia

Anthravnose

These tests have also shown that the product is a systemic, that is that a certain
10 percentage of the product will be taken up by the plant and its effectiveness will be
retained for some time.

Not only have we tried the product on the plants and fruit whilst being grown, we
also found that the product is valuable post-harvest by dipping or spraying the
product into a diluted mixture of the product and this has assisted the life of the
15 harvested products.

Practically, we prefer that the product be applied to plants during the cool of the day,
and preferably not prior to or just subsequent to rain. It is better, if it is likely to rain
within six hours to apply the product at a later time.

Also, we have found that to obtain best results, the product can be sprayed in a light
20 mist and the spray be repeated some five days after the first spray.

If, after a second spray, there is still signs of the infestation, the spraying can be
repeated after a further five days.

We have found that the residue of the product are not toxic, they are applied in only small quantities, the citrus agent is basically a natural product and the caprylic acid is in such a small overall concentration that, although it can be considered hazardous in high doses, there will be no health risk whatsoever in the use of the product.

5 Whilst in the specification we have described particular certain applications and percentages of components and quantities applied, it is to be understood that these are exemplary of the invention and not restrictive.

The invention provides a treatment which is cheaper than using high percentage citrus agent as, because of the synergistic effect of the citrus agent and the caprylic acid, the
10 quantity of citrus agent used is greatly reduced and whilst caprylic acid is itself quite expensive, it is used in such small quantities that the overall cost is minimised. Any modifications including changes in carrier and the like, and areas of application are deemed to be within the scope of the present invention.

DATED this 27 day of August, 1999

GLOBAL SPILL CONTROL PTY. LIMITED
By Its Patent Attorneys
A TATLOCK & ASSOCIATES